

GREAT SALT LAKE MINERALS & CHEMICALS CORPORATION

A SUBSIDIARY OF GULF RESOURCES & CHEMICAL CORPORATION  
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July 8, 1981

Peter Behrens  
President

U. S. Army Engineer District, Sacramento  
ATTN: Regulatory Unit 3  
Post Office Building, Room 341  
350 South Main Street  
Salt Lake City, Utah 84111

Subject: Application for permit

Dear Sirs:

This application is for a permit to build dikes in the Bear River Bay to expand the pond systems from presently 17,000 acres to 34,000 acres.

History

The existing pond system was built in 1967 and expanded in 1969 and 1973. The ponds are located on 85,000 acres of land leased from the State of Utah under various mineral leases. The leases cover the area in which the new ponds will be located. Water rights to the brine and process water from the Bear River were granted by the State of Utah. The ponds are used to extract minerals from the brines of the Great Salt Lake through solar evaporation. ~~Present products are Sulfate of Potash, Sodium Sulfate, Sodium Chloride and Magnesium Chloride.~~ The products are sold in most states of the United States and exported to countries around the Pacific Basin.

Environment

The mineral leases were issued by the State of Utah, Department of Natural Resources, Division of State Lands, with the approval of the Division of Wildlife. Pond construction plans were developed in cooperation with the Division of Wildlife to protect the interests of wildlife. To our knowledge, the existing system has had no detrimental effect on the environment and none is expected in the future.

The area to be covered with the new ponds is presently covered with water. At lower lake stages the area was mud flat without any vegetation. The water quality in the area varies with lake level, Bear River flow and wind conditions, from nearly fresh water to lake brine. The mineral lease requires that all minerals extracted from the brine but not sold are returned to the lake. For this purpose Bear River water is pumped into the ponds to dissolve unused minerals and then returned to the lake.



#### Economics

The present pond system is not capable of supplying sufficient raw material to the potash plant to ensure continuous operation. The plant is idle 4-6 months every year. The expanded system will provide raw material for year-round operation which will improve the overall economics of the operation. The markets for the increased production are available.

The State of Utah receives a royalty of presently 2.2% of the revenues received for the products extracted from the lake. This royalty increases by .2% every year until it reaches 5%. The construction cost estimate is ten million dollars.

#### Design Criteria

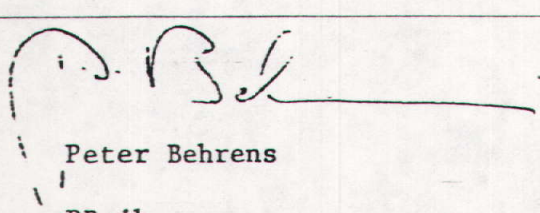
The dikes will be constructed with material hauled by truck from borrow pits at Promontory or Little Mountain. The dike crest width of 20-30 feet is controlled by construction traffic requirements. The dike crest elevation is determined either by desired brine levels in the ponds or by the expected lake elevation on the outside.

The level of the Great Salt Lake fluctuates with time and in years past it had been necessary to raise certain dikes to protect the system. The present plan calls for a dike elevation of 4,203 above mean sea level. The perimeter dikes are located either at about the 4,196 contour line, or 150 feet off the lease border line, or to accommodate the flow of the Bear River. Existing pump stations will be used to supply the brine to the new pond areas and 3 new pump stations will move brine between ponds. All pump stations are connected with the electrical power distribution system now supplying the pond system.

The Bear River will flow between the pond system and Promontory and then under the existing bridge, which has a total span of 700 feet and carries a wooden flume for brine transfer. South of this bridge the river continues between pond dikes until it passes through the bridge in the SP Railroad causeway.

If you have need of further information, please let us know.

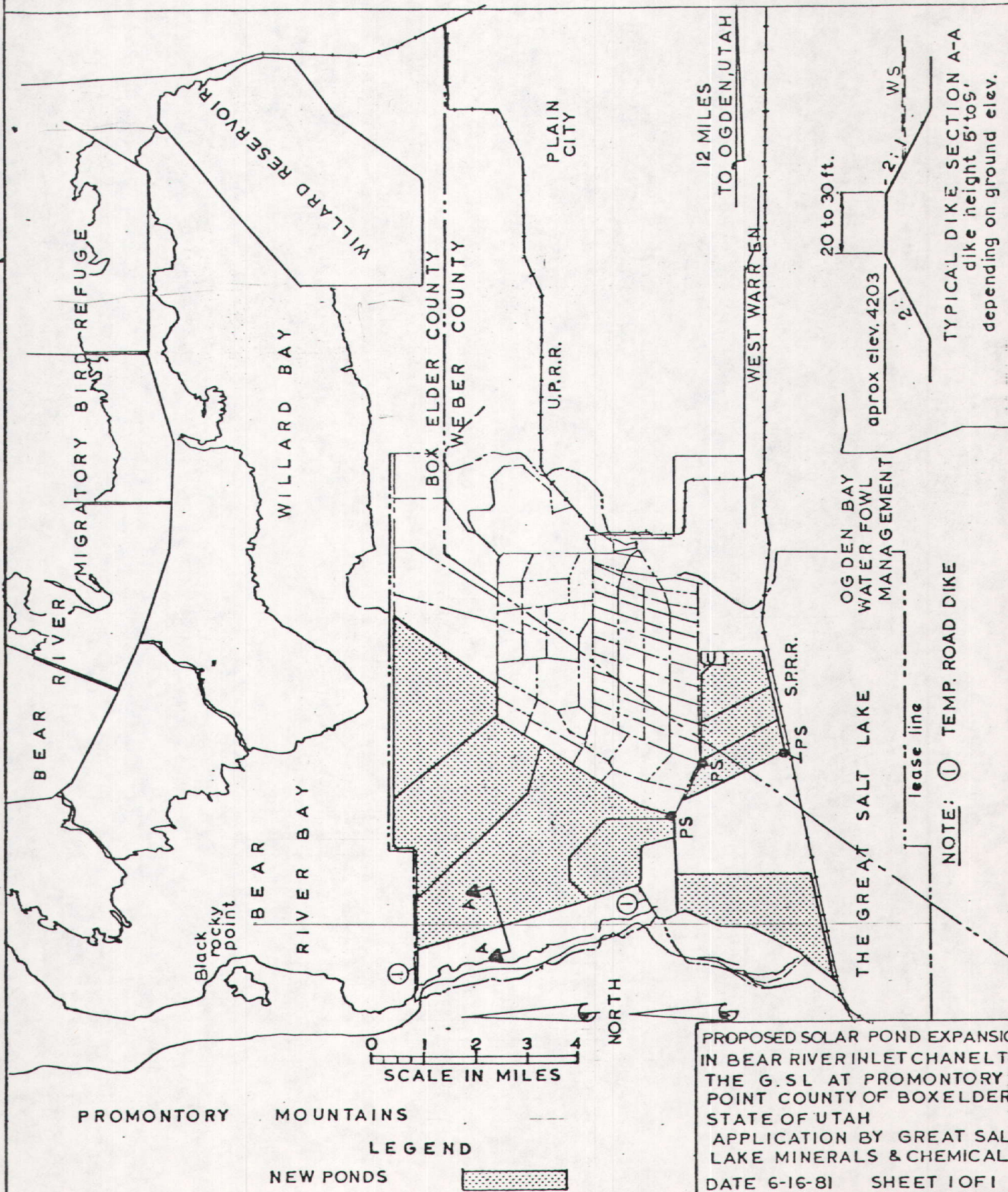
Sincerely,



Peter Behrens

PB:jk







APPLICATION FOR A DEPARTMENT OF THE ARMY PERMIT  
For use of this form, see EP 1145-2-1

Form Approved - Office of  
Mgmt & Budget No. 49-R0420

The Department of the Army permit program is authorized by Section 10 of the River and Harbor Act of 1899, Section 404 of P. L. 92-500 and Section 103 of P. L. 92-532. These laws require permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Information provided in ENG Form 4345 will be used in evaluating the application for a permit. Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary; however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and checklist) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

1. Application number (To be assigned by Corps)

2. Date

3. For Corps use only.

Day Mo. Yr.

4. Name and address of applicant.

Great Salt Lake Minerals & Chem. Corp.  
P. O. Box 1190, 765 N. 10500 W.  
Ogden, Utah 84402

Telephone no. during business hours

A/C (801) 731-3100

A/C (801) 521-3556

5. Name, address and title of authorized agent.

Telephone no. during business hours

A/C ( )

A/C ( )

6. Describe in detail the proposed activity, its purpose and intended use (private, public, commercial or other) including description of the type of structures, if any to be erected on fills, or pile or float-supported platforms, the type, composition and quantity of materials to be discharged or dumped and means of conveyance, and the source of discharge or fill material. If additional space is needed, use Block 14.

Construction of approximately 43 miles of earth dikes for solar evaporation ponds (approximately 17,000 acres) for recovery of minerals using brines from the Great Salt Lake. The minerals are harvested and processed for sale.

The dikes will be constructed of borrowed fill material from borrow pits along the (Item 6 continued under Item 14)

7. Names, addresses and telephone numbers of adjoining property owners, lessees, etc., whose property also adjoins the waterway.

The solar pond area is on leased land from the Utah State Land Board. Adjoining properties are owned by the State of Utah.

8. Location where proposed activity exists or will occur.

Address:

765 North 10500 West

Street, road or other descriptive location

Ogden, (approximately 15 miles west)

In or near city or town

Weber & Box Elder Utah

County

State

84402-

Zip Code

Tax Assessors Description: (If known)

Utah State Owned Land

Map No. Subdiv. No. Lot No.

Sec. 1,2,11,12,13,14,22,23,24,27,T6N,R5W

Sec. Twp. Rge.

Sec. 14 thru 22,28,29,30,31,23,T7N,R4W

Sec. 5,6,7,15 thru 22,30,T6N,R4W

Sec. 13,14,23,24,25,26,35,36,T7N,R5W

9. Name of waterway at location of the activity.

Bear River